

## AMENDMENTS TO THE CLAIMS

1-6. Cancelled

7. (Currently amended) A method for identifying a ~~gamma secretase~~ an inhibitor of Abeta-42 formation comprising the following steps:

a) determining whether a given test compound binds to a fatty acid  $\Delta 6$  desaturase (FADS2), and

b) determining whether the compound identified in step a) is capable of ~~inhibiting~~ modulating gamma secretase activity to reduce Abeta-42 formation, thereby identifying a ~~gamma secretase inhibitor~~ an inhibitor of Abeta-42 formation.

8. (Previously presented) The method of claim 7, wherein in step a) the test compound is brought into contact with FADS2 and the interaction of FADS2 with the test compound is determined.

9. (Previously presented) The method of claim 8, wherein the interaction of the test compound with FADS2 results in an inhibition of FADS2 activity.

10. (Currently amended) the method of claim 7, wherein in step b) the ability of the gamma secretase to cleave amyloid precursor protein (APP) is measured.

11-68. (Cancelled).

69. (Previously presented) The method of claim 7, wherein the FADS2 comprises an amino acid sequence having at least 90% sequence identity to SEQ ID NO: 76.

70. (Previously presented) The method of claim 7, wherein the FADS2 comprises an amino acid sequence having at least 95% sequence identity to SEQ ID NO: 76.

71. (Previously presented) The method of claim 7, wherein the FADS2 comprises the amino acid sequence depicted in SEQ ID NO: 76.